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# Improving year-end transfers of care in academic ambulatory clinics: a survey of pediatric resident physician perceptions

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***Background*:** In resident primary care continuity clinics, at the end of each academic year, continuity of care is disrupted when patients cared for by the graduating class are redistributed to other residents. Yet, despite the recent focus on the transfers of care between resident physicians in inpatient settings, there has been minimal attention given to patient care transfers in academic ambulatory clinics. We sought to elicit the views of pediatric residents regarding year-end patient handoffs in a pediatric resident continuity clinic.

***Methods*:** Residents assigned to a continuity clinic of a large pediatric residency program completed a questionnaire regarding year-end transfers of care.

***Results*:** Thirty-one questionnaires were completed out of a total 45 eligible residents (69% response). Eighty seven percent of residents strongly or somewhat agreed that it would be useful to receive a written sign-out for patients with complex medical or social issues, but only 35% felt it would be useful for patients with no significant issues. Residents more frequently reported having access to adequate information regarding their new patients' medical summary (53%) and care plan (47%) than patients' functional abilities (30%), social history (17%), or use of community resources (17%). When rating the importance of receiving adequate sign-out in each those domains, residents gave most importance to the medical summary (87% of residents indicating very or somewhat important) and plan of care (84%). Residents gave less importance to receiving sign-out regarding their patients' functional abilities (71%) social history (58%), and community resources (58%). Residents indicated that lack of access to adequate patient information resulted in additional work (80%), delays or omissions in needed care (56%), and disruptions in continuity of care (58%).

***Conclusions*:** In a single-site study, residents perceive that they lack adequate information during year-end patient transfers, resulting in potential negative consequences for patient safety and medical education.

Keywords: *continuity clinic*; *resident training*; *transfers of care*; *sign-out*; *medical home*

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Patient handoffs, or sign-outs, are a routine part of care in most medical settings, but they are also particularly prone to communication failures. The Joint Commission, the Institute of Medicine, the World Health Organization, and others have recognized that the handoff process is particularly vulnerable to errors (1–3). In the last several years, patient handoffs in teaching hospitals have come under increasing scrutiny for a variety of reasons, including a growing focus on reducing medical errors and the implementation of restrictions in resident duty hours, which have predictably led to more frequent handoffs. An emerging literature describes strategies for making the sign-out process safer and more effective (4–8).

Thus far, the focus has been almost exclusively on transfers of care in inpatient settings. As recently highlighted by a commentary in a prominent medical journal, there are virtually no published studies focusing on the patient care transfer in academic ambulatory clinics (9). Although the risks differ in ambulatory and inpatient settings, there are compelling reasons for work in this area. In ambulatory settings, the principal function of effective sign-outs is to maintain continuity of care. In resident clinics, one major disruption to continuity occurs at the end of each academic year, when patients cared for by the graduating class are redistributed to other residents. This disruption presents a serious but unaddressed patient safety issue at academic medical centers (9), particularly

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for patients with complex medical and social needs. Efforts to preserve continuity of care in resident clinics have become even more important in recent years, as residency programs in primary care specialties are beginning to look for ways to introduce their trainees to the Patient-Centered Medical Home. The Patient-Centered Medical Home, a model of care first developed within pediatrics and now widely adopted by major primary care societies, seeks to provide care that is accessible, family-centered, continuous, comprehensive, coordinated, culturally effective, and compassionate (10).

Continuity of care is one of the fundamental components of a medical home and one of the more challenging ones to maintain in resident continuity clinics (11). In this study, we assess the view of pediatric residents regarding the need for year-end outpatient sign-outs. This analysis can help illuminate present deficiencies in the transfer of patients and suggest possible negative consequences of these deficiencies. We hypothesize that the present handoff process results in additional work for residents, delays or omissions in needed care, and disruptions in continuity of care. Information on resident perceptions can contribute toward the design of systematic improvements in the transfer process.

## Methods

The setting for this study is the UCLA Pediatrics Primary Care Clinic (PCC), the principal continuity clinic site for the UCLA Pediatrics Residency Program. The residency program trains approximately 88 residents at four campuses: a university hospital, two community hospitals, and a county hospital. In 2010, 45 residents were assigned to PCC for their continuity clinic, with the remainder assigned to community sites. Approximately 10,000 patient visits per year are seen at PCC. Most patients come from low-income families, with more than 80% receiving public insurance. Within this clinic, the Pediatric Medical Home Program, established in 2003, provides primary care coordination for medically complex children (12). Each June, at the end of each academic year, approximately 15 residents graduate. Over the following months, their patients are reassigned to new and existing pediatric residents as patients schedule follow-up appointments. Prior to this study, handoff processes were informal and relied on the initiative of graduating residents.

In 2010, we distributed an anonymous, written, self-administered questionnaire to all residents assigned to PCC for continuity clinic. The survey included five items. For each item, residents' were asked to rate their perceptions of the *adequacy* of the information they had when assuming care of new continuity patients and the *perceived usefulness* of receiving formal sign-out for these patients. Responses were elicited either in a 1–5 likert-like scale (strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree) or yes/no format. For ease of exposition, we dichotomized the responses into two groups, agree (consisting of strongly or somewhat agree) and disagree (strongly disagree, disagree, or neither agree nor disagree).

All analyses were performed using Stata version 9.2. This research project was approved by the UCLA Institutional Review Board.

## Results

Thirty-one residents completed surveys out of a total 45 residents with continuity clinic at PCC (69% response rate). Eighty-seven percent of residents agreed (strongly or somewhat agreed) that it would be useful to receive a written sign-out for patients with complex medical or social issues, but only 35% felt it would be useful for patients with no significant issues. Many residents reported that they did not have adequate information when assuming care of patients with chronic conditions: 53% felt they had an adequate medical summary (somewhat or strongly agreed), 47% felt they had an adequate care plan, 30% felt they had adequate information regarding functional abilities, 17% reported having adequate information about social history, and 17% reported adequate information about the patient's use of community resources (Table 1). Residents felt that, when assuming care of new patients, it was important to receive sign-out regarding the medical summary, which 87% found very or somewhat important, and plan of care (84%). Residents gave less importance to receiving sign-out regarding their patients' functional abilities (71%), social history (58%), and community resources (58%). Notably, first-year residents gave more importance to information regarding social history and community resources than did second- and third-year residents (Table 1). Residents indicated that lack of access to adequate patient information resulted in additional work (80%), delays or omissions in needed care (56%), and disruptions in continuity of care (58%).

## Discussion

In resident clinics, the transfer of patients at the end of each academic year has been noted to be a serious but largely unaddressed patient safety issue (9). In a large pediatric residency clinic, we assessed resident perceptions of the importance of formal sign-out in ambulatory settings and of the adequacy of information they had when assuming care of a new primary care patients.

In our survey of resident perceptions, a large majority of our residents (87%) felt that it was important to receive sign-outs for medically complex patients, but only 35% felt it was important for patients with no significant issues. They particularly valued the medical summary and plan of care and gave less importance to a description of the patients' social history and use of community resources. Residents indicated that having inadequate



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*Table 1.* Pediatric resident perceptions regarding year-end transfer of patients

| | n | Sign-out category | | | | |
|---|---|---|---|---|---|---|
| | | Medical summary n (%) | Functional abilities n (%) | Social history n (%) | Community resources n (%) | Plan of care n (%) |
| I had adequate information when assuming care of patient (somewhat/strongly agree) | | | | | | |
| Total | 31 | 16 (53) | 9 (30) | 5 (17) | 5 (17) | 15 (47) |
| PGY-1 | 11 | 7 (64) | 4 (36) | 3 (27) | 2 (18) | 7 (64) |
| PGY-2 | 10 | 3 (30) | 3 (30) | 1 (10) | 1 (10) | 3 (30) |
| PGY-3 | 10 | 6 (60) | 2 (20) | 1 (10) | 2 (20) | 5 (50) |
| Importance of receiving sign-out for new patients (somewhat/very important) | | | | | | |
| Total | 31 | 27 (87) | 22 (71) | 18 (58) | 18 (58) | 26 (84) |
| PGY-1 | 11 | 11 (100) | 10 (91) | 9 (82) | 9 (82) | 11 (100) |
| PGY-2 | 10 | 8 (80) | 7 (70) | 6 (60) | 5 (50) | 8 (80) |
| PGY-3 | 10 | 8 (80) | 5 (50) | 3 (30) | 4 (40) | 7 (70) |

information on their new patients led to additional work (80%), delays or omissions in needed care (56%), and disruptions in continuity of care (58%). These findings suggest that improving the processes to transfer care of patients, particularly complex patients, represents a promising locus for quality improvement efforts.

Our study represents a starting point in the development of novel approaches for improving the quality of care transfers in academic ambulatory settings. The generalizability of our conclusions is limited by its single-site design. Future studies would benefit from collaboration between institutions, paralleling the efforts currently in progress for inpatient transfers of care (13). At our institution, we have piloted a Patient Sign Out tool to facilitate the transfer of care of patients between graduating postgraduate year-3 (PGY-3) residents and incoming PGY-1 residents. The initial focus is on the most complex patients, those enrolled in our Pediatric Medical Home program. The Patient Sign-Out, which can be completed on paper or electronically, prompts residents to provide information in four categories: a brief medical summary, the child's current developmental and functional abilities, a social history, and a care plan [see Appendix]. Future evaluations will assess whether such a tool leads to improvements in patient care and redresses the deficits in care transfers identified by the resident survey.

Trends in child health are creating a greater demand for caring for children with chronic illness (14–17). For many years, observers have noted that training programs must evolve to meet this challenge (14, 18–20). Yet, specific curricular elements of such training have not been clearly articulated in the medical education literature. Training gaps in this area remain largely unexamined. A recent study exploring what pediatric residents are taught about children and youth with special health care showed relatively low levels of comfort in identifying community resources and collaborating with community agencies (21). In our study, when assessing whether they had received adequate information when assuming care of patient with chronic conditions, only 17% reported receiving adequate information about community resources and social history, and only 30% reported receiving adequate information about functional abilities. In contrast, nearly 50% indicated they had adequate medical summaries and care plans.

Interestingly, residents also felt these categories were *less important* – over 80% of residents indicated that receiving sign-out regarding the medical summary or care plan was somewhat or very important, but fewer than 60% felt similarly about social history or community resources. We noted a trend for giving decreasing importance to these areas by upper-level residents compared to first-year residents. For example, 82% of first-year residents felt that receiving sign-out regarding

social history was somewhat or very important, in contrast to 60% of second-year residents and 30% of third-year residents (Table 1). These findings highlight the challenge of educating residents in caring for this population of children with complex care needs. Family-centered partnerships and integration into community-based system are core principles of the Patient-Centered Medical Home (10). Yet, our findings suggest that residents may not prioritize these dimensions of primary care. Shifting the focus from acute, episodic care to chronic, systems-based care will require transforming medical education in a manner that addresses trainees' knowledge, skills, and attitudes, as well as developing reliable methods to preserve continuity of care during transitions between caregivers.

## Conclusions

Pediatric residents at one institution's primary care continuity clinic report that, when assuming care of new patients, they frequently lacked adequate information, particularly with regard to patients' social history and use of community resources. Inadequate information was perceived to result in additional work and disruptions in continuity of care. A formal process to transfer patients at the end of each year can potentially address perceived patient care deficits, particularly for patients with chronic diseases. Future research in this area, combined with local quality improvement initiatives, can help identify best practices in approaches to transferring patients in academic ambulatory clinics, potentially resulting in improved quality of care and in enhanced education of our trainees in the provision of primary care following the precepts of the Patient-Centered Medical Home.

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## Appendix: Medical Home Patient Sign Out Tool.

# Medical Home Patient Sign-out

Graduating 3rd years -> oncoming interns


Patient name:_____

Date of birth:_____ MR#:_____

*Please note: This signout is intended to supplement the information found in the medical record. The goal is to help the new resident get to know the patient and family and formulate a care plan.*

**Brief Medical Summary**

**Child's current developmental and functional abilities**

**Social History (family life, schooling)**

[] Followed by clinic social worker

**Care Plan by Systems or Subspecialty**

*(e.g.: Cardiology: h/o VSD, seen by Dr. Levi last 1/10, echo unchanged, f/u due 1/11)*

Other active issues